

ABSTRACT OF THE INVENTION

The present invention relates to a silicon on insulator ("SOI") structure having a low defect density device layer and, optionally, a handle wafer having improved gettering capabilities. The device layer comprises a central axis, a circumferential edge, a radius extending from the central axis to the circumferential edge, and a first 5 axially symmetric region which is substantially free of agglomerated intrinsic point defects. Additionally, the present invention is directed to such a SOI structure which has a Czochralski single crystal silicon handle wafer which is capable of forming an ideal, non-uniform depth distribution of oxygen precipitates upon being subjected to the heat treatment cycles of essentially any arbitrary electronic device manufacturing 10 process.